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PATENT COOPERATION TREATY

PCT/EP2003/010656



Translation

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY
(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference B02/0589PC	FOR FURTHER ACTION See Form PCT/IPEA/416	
International application No. PCT/EP2003/010656	International filing date (day/month/year) 25 September 2003 (25.09.2003)	Priority date (day/month/year) 27 September 2002 (27.09.2002)
International Patent Classification (IPC) or national classification and IPC C08G 18/08		
Applicant BASF AKTIENGESELLSCHAFT		

- This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
- This REPORT consists of a total of 5 sheets, including this cover sheet.
- This report is also accompanied by ANNEXES, comprising:
 - ☒ (sent to the applicant and to the International Bureau) a total of 2 sheets, as follows:
 - ☐ sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).
 - ☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.
 - ☐ (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).
- This report contains indications relating to the following items:
 - ☒ Box No. I Basis of the report
 - ☐ Box No. II Priority
 - ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
 - ☐ Box No. IV Lack of unity of invention
 - ☒ Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
 - ☐ Box No. VI Certain documents cited
 - ☐ Box No. VII Certain defects in the international application
 - ☐ Box No. VIII Certain observations on the international application

Date of submission of the demand 05 February 2004 (05.02.2004)	Date of completion of this report 09 December 2004 (09.12.2004)
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/EP2003/010656

Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ This report is based on translations from the original language into the following language _____, which is language of a translation furnished for the purpose of:

- ☐ international search (under Rules 12.3 and 23.1(b))
☐ publication of the international application (under Rule 12.4)
☐ international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the elements of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

☐ The international application as originally filed/furnished

☒ the description:

pages _____ 1-24 _____, as originally filed/furnished

pages* _____ received by this Authority on _____

pages* _____ received by this Authority on _____

☒ the claims:

pages _____, as originally filed/furnished

pages* _____, as amended (together with any statement) under Article 19

pages* _____ 1-7 _____ received by this Authority on _____ 19.11.04

pages* _____ received by this Authority on _____

☐ the drawings:

pages _____, as originally filed/furnished

pages* _____ received by this Authority on _____

pages* _____ received by this Authority on _____

☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
☐ the claims, Nos. _____
☐ the drawings, sheets/figs _____
☐ the sequence listing (*specify*): _____
☐ any table(s) related to sequence listing (*specify*): _____

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages _____
☐ the claims, Nos. _____
☐ the drawings, sheets/figs _____
☐ the sequence listing (*specify*): _____
☐ any table(s) related to sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**1. Statement**

Novelty (N)	Claims	1 - 7	YES
	Claims		NO
Inventive step (IS)	Claims	1 - 7	YES
	Claims		NO
Industrial applicability (IA)	Claims	1 - 7	YES
	Claims		NO

2. Citations and explanations

1. This report makes reference to the following documents:

D1: WO 01/34394 A (KIMELBLAT JANKIEL; FRENKEL MOSHE
(IL); NITZAN BOAZ (IL); FIGOV MUR)
17 May 2001 (2001-05-17)
D2: WO 00/22055 A (GEN ELECTRIC CO PLC)
20 April 2000 (2000-04-20)
D3: DE 41 07 136 A (BASF LACKE & FARBEN)
10 September 1992 (1992-09-10)
D4: WPI abstract of JP6-200149 & JP6-200149

2. Novelty

The present application pertains to a process for printing substrates according to the ink-jet process using thermally cross-linkable, aqueous recording fluids containing random polyurethane copolymers and a melamine derivative as a cross-linking agent (claims 1-4). Further, the application pertains to the corresponding printed substrates (claim 5), a process for producing colourant preparations for recording fluids as per claim 1 containing a blend of random polyurethane copolymers, a melamine

derivative as a dispersant-binding agent, water and a colourant, characterized in that the dispersant-binding agent, water and colourant are blended in a ball mill (claim 6), and the corresponding colourant preparations (claim 7).

D3 discloses neither an ink nor a blending process in a ball mill. The ink-jet inks described in D2 are non-aqueous. D1 does not disclose thermally cross-linkable recording fluids (unsubstituted melamine = a photoinitiator) or a process using a ball mill. D4 discloses printing inks; the melamine derivative is added after the blending (ball mill) of a pigment and urethane resin.

Consequently, the subject matter of claims 1-7 of the present application is novel over D1-D4.

3. Inventive step

D4 is considered the closest prior art.

The present application differs from the subject matter of D4 in that the colourant preparation is used for the ink-jet process (claims 1-5) and that all the constituents are blended in a ball mill (claims 6 and 7).

The problems addressed by the present invention consist in providing a process according to the ink-jet process (claims 1-5) and providing a process for producing colourant preparations (claims 6 and 7).

The problems are solved by the use of the colourant preparation for the ink-jet process (claims 1-5) and

by blending all the constituents in a ball mill (claims 6 and 7).

These solutions are neither proposed in D4 nor obviously suggested by a combination of D4 and D1-D3, since D1-D3 do not disclose ball mills (claims 6 and 7) or ink-jet processes using aqueous, thermally cross-linkable recording fluids.

Consequently, the subject matter of claims 1-7 involves an inventive step over D1-D4.